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PATENT COOPERATION TREATY

From the
RC 7-06-04 INTERNATIONAL PRELIMINARY EXAMINING AUTHORITYTo:
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PCT

WRITTEN OPINION

(PCT Rule 66)

Applicant's or agent's file reference 1330.013WO1 140226		Date of Mailing (day/month/year) 26 MAY 2004
International application No. PCT/US03/25408		REPLY DUE within 2 months/days from the above date of mailing
International filing date (day/month/year) 12 August 2003 (12.08.2003)	Priority date (day/month/year) 12 August 2002 (12.08.2002)	
International Patent Classification (IPC) or both national classification and IPC IPC(7): B01D 61/00; C02F 1/44 and US Cl.: 210/650, 651, 652, 90, 87, 136, 295, 282, 323, 1232		
Applicant GE OSMONICS INC		

- This written opinion is the first (first, etc.) drawn by this International Preliminary Examining Authority.
- This opinion contains indications relating to the following items:
 - ☒ Basis of the opinion
 - ☐ Priority
 - ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Lack of unity of invention
 - ☒ Reasoned statement under Rule 66.2 (a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Certain documents cited
 - ☐ Certain defects in the international application
 - ☐ Certain observations on the international application
- The applicant is hereby invited to reply to this opinion.

When? See the time limit indicated above. ~~The applicant may, before the expiration of that time limit, request this Authority to grant an extension. See rule 66.2(d).~~

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
- The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 12 December 2004 (12.12.2004)

Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Krishnan S Menon <i>[Signature]</i> Telephone No. 571-272-1700
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Form PCT/IPEA/408 (cover sheet)(July 1998)

I. Basis of the opinion**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed
- ☒ the description:
pages 1-32, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____
- ☒ the claims:
pages 33-39, as originally filed
pages NONE, as amended (together with any statement) under Article 19
pages NONE, filed with the demand
pages NONE, filed with the letter of _____
- ☒ the drawings:
pages 1-18, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE
- ☐ the claims, Nos. NONE
- ☐ the drawings, sheets/fig NONE

5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed."

WRITTEN OPINION

International Application No.
PCT/US03/25408

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims <u>20,21 and 30-43</u>	YES
	Claims <u>1-19 and 22-29</u>	NO
Inventive Step (IS)	Claims <u>38-40</u>	YES
	Claims <u>1-37 and 41-43</u>	NO
Industrial Applicability (IA)	Claims <u>1-43</u>	YES
	Claims <u>NONE</u>	NO

2. CITATIONS AND EXPLANATIONS

Please See Continuation Sheet

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

TIME LIMIT:

The time limit set for response to a Written Opinion may not be extended. 37 CFR 1.484(d). Any response received after the expiration of the time limit set in the Written Opinion will not be considered in preparing the International Preliminary Examination Report.

V. 2. Citations and Explanations:

Claims 1-19 and 22-29 lack novelty under PCT Article 33(2) as being anticipated by US 6,190,558 B1 (ROBBINS).

Robbins teaches a tankless RO system giving 1-2 LPM (would be about 500 GPD) (col 4 lines 30-35); use under kitchen sink - col 7 lines 5-10.

750 and 1000 GPD as in claims 2 and 3 are within the range provided by the reference; membrane assembly as in claims 4 and 5 - to fit under the kitchen sink, and volume of the assembly as in claims 6-8, again, to fit the space under the kitchen sink.

Claims 9,29: One or more element - col 4 lines 15-20. Displacement volume of 668 cubic inches: volume to suit the fit under the kitchen sink; any commercially available element can be used - col 3 line 66-67.

Claims 10-14: A values: this is a term defined by the applicant. Since the reference meets the GPD requirement and the fit under the kitchen sink requirement, and any commercial membrane element could be used, the membrane would inherently have such 'A' values as defined by the applicant.

Claims 15,16: Size of the element of < 6 in diameter and < 18 in length - again, any standard commercial element to fit under the kitchen sink would meet this.

Claims 17-19: Single or double or multi leaf elements: any commercial element - col 3 lines 66-67; commercial elements are known to have single and multi-leaf construction.

Claim 22: Recovery rate 25-50% - see col 5 lines 30-67.

Claim 23: permeate does not go through a post filter - see figure

Claims 24 and 25: the system described is seen in the figure; there is no novelty involved in the location of mounting of the indicators

Claims 26-28: the system as described is seen in the figure and col 4 lines 30-35.

Claims 20 and 21 lack an inventive step under PCT article 33(3) as being obvious over US 6,190,558 B1 (ROBBINS): H value is another applicant-defined term. The reference does not teach H values. However, since the reference teaches any commercial element could be used, and commercial elements use Naltec or similar polypropylene or polyester permeate spacers, these claims lack an inventive step.

Claims 31,33,34,35 lack an inventive step under PCT article 33(3) as being obvious over US 6,190,558 B1 (ROBBINS) in view of US 5,891,333 A (FERGUSON): Robbins teaches all the elements in claim 31 as described in the preceding paragraphs, except for the elongated assembly with ends caps, etc. Ferguson teaches an 'elongated' assembly (molded) with end caps and end connections (see figures and col 3 lines 7-57). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Ferguson in the teaching of Robbins to have a system fit over or under the counter as taught by Ferguson. The 'permeate tube running longitudinally' in claim 31 lacks an inventive step because one obviously has to run the necessary tubes along for various

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

process streams.

Claim 32: The elements are longitudinally oriented - see Ferguson.

Claims 41-43 lack an inventive step under PCT article 33(3) as being obvious over US 6,190,558 B1 (ROBBINS) in view of US 5,891,333 A (FERGUSON) as applied in the immediately preceding paragraph and further in view of US 2002/0046969 A1 (BARTSCH et al): Robbins in view of Ferguson teaches all the limitations of the instant claims, except the details of the quick connect fitting and the key to keep the connection in position. Guest fittings, the fittings used by the applicant, is commercially available, and there is no novelty in it. Bartsch teaches a key for keeping position of a valve system with respect to a spray head in a container (see figures and paragraph 0031). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Bartsch in the teaching of Robbins in view of Ferguson to position the connector fittings as taught by Bartsch.

Claims 30, 36, 37 lack an inventive step under PCT article 33(3) as being obvious over US 6,190,558 B1 (ROBBINS) in view of US 5,891,334 A (GUNDRUM et al): Robbins teaches all the limitations of the claims as discussed in the paragraphs above, except for two or more elements in series. However, the pair of, or two or more elements in series does not make an inventive step because it is known in the art to have elements in series to meet the quality requirements while increasing recovery, as taught by Gundrum - see col 2 lines 3-15.

Claims 38-40 meet the criteria set out in PCT article 33(2)-(3), because prior arts do not teach or fairly suggest the limitation 'at least one of the cartridge holding adapted to engage an outer portion of ... housing ... to either tighten or loosen the cartridge housing ...'.

Claims 1-43 meet the criteria set out in PCT article 33(4) and thus meet the industrial applicability because the system described has applications for household drinking water supply

----- NEW CITATIONS -----

US 2002/0046969 A1 (BARTSCH et al) 25 April 2002 (25.04.2002), figures, paragraph 0031